HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: General Physics I				
CODE: PHYS101	**SEMESTER:** FALL			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES:- **CO-REQUISITES:-**	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:	3	2	4	6

CONTENT OF THE COURSE:
Definition of accuracy and significance of results in a measurement. Expressing vector quantities using different methods. Description of motion in one and multi-dimensions and their application to various problems. Introduction of Newton's laws of motion andc onservation laws, and their applications to various problems. Description of rotational motion and their applications specifically rigid bodies in static equilibrium. Using mechanical laws to describe planetary motion and fluids mechanics.

OBJECTIVE OF THE COURSE:
The main objective of this course is to help students to develop an understanding of fundamental physical concepts and principles related to mechanics and an ability to use these concepts and principles to analyze and solve broad range of quantitative problems in the real world. This course also will teach student how to communicate scientific ideas effectively.

WEEKLY SCHEDULE	
Week	**Topics**
1	Units, Physical Quantities, and Vectors
2	Units, Physical Quantities, and Vectors
3	Motion along a straight line
4	Motion along a straight line
5	Motion in two or three dimensions
6	Motion in two or three dimensions
7	Newton's Laws of Motion
8	MIDTERM
9	Work and Kinetic Energy
10	Work and Kinetic Energy
11	Potential Energy and Energy
12	Potential Energy and Energy
13	Momentum, Impulse, and Collisions
14	Momentum, Impulse, and Collisions

TEXTBOOK:
SEARS AND ZEMANSKY'S University Physics with Modern Physics, 14th Ed. by Young and Freedman, Pearson (2016).
REFERENCE BOOKS:
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EVALUATION SYSTEM:		
IN-TERM STUDIES	**QUANTITY**	**PERCENTAGE (%)**
Midterm Exam	1	40
Homework	0	0
Labworks	4	15
Quiz	0	0
Final Exam	1	45
TOTAL		
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	5	55
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	45
TOTAL		100

COURSE CATEGORY:	**PERCENTAGE (%)**
Mathematics and Basic Sciences	%50
Engineering	%40
Engineering Design	%10
Social Sciences	%0

TABLE OF ECTS / WORKLOAD:			
Activities	**QUANTITY**	**Duration (Hour)**	**Total Workload**
Course Duration	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	9	126
Mid-term	1	2	2
Final examination	1	2	2
Labworks	4	2	8
Quiz	0	0	0
Total Work Load			**177**
Total Work Load / 30			**5,9**
ECTS Credit of the Course			**6**

INSTRUCTOR(S):	Asst. Prof. Dr. Ercüment Karapınar
FORM PREPARATION DATE:	25.11.2019

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	1	1	1	0	0	0	0	0	0	0	0
LO2	3	3	3	0	0	0	0	0	0	0	0
LO3	1	3	1	0	0	0	0	0	0	0	0
LO4	1	1	0	3	0	0	0	0	0	0	0
LO5	1	1	0	0	0	0	0	0	0	0	0
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

LEARNING OUTCOMES OF THE COURSE:	**PROGRAM OUTCOMES:**
LO1: Learning significance and accuracy concepts in a measurement. LO2: Applying knowledge of math, science, and engineering to everyday mechanical physics problems. LO3: Learning how to communicate and share scientific ideas. LO4: Learning concept of motion and its application to one- and multi-dimension problems. LO5: Application of Newton's laws and conservation laws to broad range of problems including planetary motion and fluid mechanics.	**PO1:** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. **PO2:** Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. **PO3:** Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. **PO4:** Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. **PO5:** Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions. **PO6:** Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. **PO7:** Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. **PO8:** Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. **PO9:** Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in

	engineering practice. **PO10:** Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development. **PO11:** Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.